

Docket No.: 60,130-1786
Serial No.: 10/619,231

REMARKS

Claims 1-17 are pending and stand rejected. Claims 18-20 are added.

The Examiner has rejected claims 1, 6-8 and 11 as obvious over Rosenberg (6,641,646). Rosenberg does not disclose flushing ash from a diesel particulate filter, as the Examiner apparently acknowledges. Rosenberg discloses a filter-cleaning device that uses a high-pressure pulse of air to back-blow flush a disc-type air filter. (col. 4, lines 10-14). First, the disc-type air filters for which the Rosenberg device is intended are very different from the diesel particulate filters for which the present invention is intended. The disc type filter used in Rosenberg simply includes a stack of annular discs 12 which form an outer passageway at the outer circumference and an inner passageway at their inner circumference. Air flows from the outer passageway through the discs to the inner passageway. (col. 3, lines 10-17). To clean the disc-type air filter, Rosenberg blasts pulses of air into the inner passageway, which blasts dirt radially outwardly from the annular discs 12.

[0001] A diesel particulate filter is more intricate and complex. The diesel particulate filter includes a housing containing filter media having a plurality of thin-walled parallel passages extending longitudinally through the trap. Each passage is hollow and bounded by openings at each longitudinal end. At each end, alternate openings are closed, so that each passage is closed at one of its ends and open at the other and adjacent passages are closed at opposite ends. Any exhaust gas or combustion product that enters the filter through an unplugged opening must pass through the semi-permeable thin walls in order to exit the filter. Particulate matter unable to pass through

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the walls is thereby filtered to prevent emission to the atmosphere. These diesel particulate filters require a burner to oxidize carbon trapped in the diesel particulate filter, thus creating carbon dioxide. Problems occur with oil and fuel additives because they create ash that will not burn off.

[0002] It would not be obvious or effective to use the Rosenberg device to try to clean a diesel particulate filter. The air pulses used by Rosenberg would not effectively dislodge ash from the long passages and the thin walls. In the preferred embodiment of the present invention, rather than blasting the ash out of the diesel particulate filter, which cannot be done, a fluid (such as a liquid) is flowed slowly and steadily through the filter. While acoustic waves assist in dislodging the ash from the long passages and the thin filter walls, the fluid flowing through the filter carries the ash out of the filter.

[0003] Because the Rosenberg device would not be effective in removing ash from a diesel particulate filter, it would not be obvious to use it to do so. Nor is there any suggestion for using the Rosenberg device for removing ash from a diesel particulate filters. Therefore, all of the pending claims are allowable over the cited prior art.

[0004] The Examiner has rejected claims 2-5, 9, 10 and 12-17 as obvious over Rosenberg in view of Davis (U.S. 6,251,294). There is no suggestion or motivation for adding ultrasonic waves to Rosenberg's design. Rosenberg uses pulses of air to dislodge dirt from the disc-type filter. Thus, one of skill in the art would not see a need for ultrasonic waves where Rosenberg already blasts the filter with pulses of air. Therefore, claims 2-5, 9, 10 and 12-17 are independently patentable.

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[0005] It is believed that no fees are due. If any additional fees or extensions of time are required, please charge to Deposit Account No. 50-1482.

Respectfully submitted,

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